DESCRIPTIONS AND RECORDS OF NORTH AMERICAN HIPPOBOSCIDÆ.

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1. **Olfersia albipennis** Say.

1823. *Olfersia albipennis* Say, Journal of the Academy of Natural Sciences of Philadelphia, III, p. 102.

Length 5 mm., the head and thorax alone measuring 2.75 mm., and the distance from the front of the head to the tip of the wing measuring 7 mm., the thorax being 2 mm. wide at the widest part. Head and thorax blackish brown. Head elliptical, nearly one and one half times as wide as long, the face about twice as broad as the eyes and narrowing anteriad, the rather broad orbital margins and the semicircular, uniformly convex vertex smooth and polished, leaving a subtrapezoidal, opaque median area. Inner edges of the polished orbital margins more or less hairy. Clypeus seven tenths as long as the front, usually rather shiny, divided into two sections by a deep, median, transverse sulcation, the apical section rather broad and anteriorly broadly and shallowly emarginate, so that its visible basal width along the dividing sulcation is fully one half of the distance across the emargination between the lateral apices. Antennary processes brownish black and bearing long ferruginous and black hairs. Palpi blackish, subequal to the clypeus in length, copiously clothed with short, pale hairs. Eyes shining blackish. Humeral processes short and heavy, their tips obtuse, in color a yellowish testaceous distinctly paler than the coloration of the rest of the thorax above, bearing several short blackish hairs and one long black bristle. Mesonotum with a distinct, impressed, median longitudinal line and straight, deep, transverse, median sulci which are but slightly if at all interrupted medially, the whole having a distinct cruciate form. Mesonotum anteriorly with a very few, long, pale ferruginous hairs. Scutellum posteriorly broadly rounded, its apical margin finely rimmed and thinly provided with short, pale hairs, a deep median longitudinal sulcus giving it a sub-bilobed appearance. Pleura opaque and grayish because of a thin pollinosity over the dark brown integument. Under side of head brown, the labium whitish. Sternum flat, shining dark brown, the anterior angles prominent and extending as short, contrastingly black lobes between the anterior coxæ. Legs dark brown, below finely pale-haired, above sparsely black-haired, the claws black. Tergum light brown, darkening laterally, the base and apical portion together with a medio-apical stain, blackish, venter light brown, the whole abdomen thinly short-haired, these varying in color from pale at the base to blackish toward the tip of the abdomen, tergum with two latero-apical tufts of long, black hairs. Wings whitish, the costal veins and basal part of the longitudinal veins dark

brown, the costa only moderately thickened beyond the end of the first vein which joins the costa a little before the first crossvein, the costal border of the marginal cell one and one third times as long as the costal border of the first submarginal cell, the first basal cell over twice as long as the second basal cell.

Say states that the numerous species described in the paper in which *Olfersia albipennis* and *Ornithomyia nebulosa, pallida* (=*anchineuria*) and *confluenta* were described (Journ. Acad. Nat. Sci. Phila., iii, pp. 9–54 and 73–104), were collected chiefly by himself while on the Major Long Expedition. Inasmuch as the party spent the period from September 9, 1819, to June 6, 1820, at Engineer Cantonment, near the present site of the town of Blair in eastern Nebraska, and since he notes "*Ardea herodias*," "*Strix nebulosa*" and "*Sylvia sialis*" (respectively the three species of birds from which the first three above-mentioned flies were collected) as present at Engineer Cantonment during his stay, it seems highly probable that the types of these species were collected at that place. *O. confluenta*, taken from "*Ardea candidissima*," was probably taken lower down on the Missouri river or further east. With *O. nebulosa* and *O. pallida*, their hosts become so uncommon outside the Missouri valley that it is almost certain they could not have been taken by Say at any point further west.

O. albipennis is here redescribed from three specimens all collected at Lincoln, Nebraska, two April 18, 1892, on a black-crowned night heron (*Nycticorax nycticorax naevius*) by L. Bruner, and the third April 13, 1900, on a green heron (*Butorides virescens virescens*) by J. S. Hunter. Say's specimen was from a great blue heron (*Ardea herodias* subsp.). The coincidence of locality and host, together with the perfect agreement of my specimens with Say's description, especially in such characters as the pale humeral tubercles, whitish wings, size, etc., make it as certain as one can reasonably be that the above-described species is truly *albipennis* Say. As Say's type is lost, I select the above-mentioned specimen from the green heron to stand as the neotype of the species.

A variety of *O. albipennis*, having the scutellum with the median longitudinal sulcus very weak, so that the scutellum is not at all subbilobed in appearance, and the vertex with a large, shallow anterior concavity (this is feebly marked in typical *albipennis*) is represented

in a specimen collected on the laboratory window of the department of entomology at the University of Nebraska, May 11, 1901. This specimen was not infesting a heron, but either a mourning dove (*Zenaidura macroura marginella*) or one of six species of shore birds, fresh specimens of all of which were in the room at the time. These shore birds were the semipalmated plover (*Ægialitis semipalmata*), golden plover (*Charadrius dominicus dominicus*), Hudsonian godwit (*Limosa hæmastica*), white-rumped sandpiper (*Pisobia fuscicollis*), red-backed sandpiper (*Pelidna alpina sakhalina*) and semipalmated sandpiper (*Ereunetes pusillus*).

The European *O. ardeæ* Macquart has been recorded by Loew from "North America," and by J. B. Smith from New Jersey on the little blue heron (?black-crowned) night heron and bittern, and is the only other North American species recorded from a heron. The larger size (6 mm.), dusky wings and shining black coloration described for *ardeæ* indicates entire distinctness from *albipennis*.

2. **Olfersia botaurinorum** new species.

Very similar to *O. albipennis* Say, above redescribed, but distinctly larger, the length of the head and thorax measuring 3.25 mm., the width of the thorax at its widest part 2.5 mm., and the distance from the front of the head to the tip of the wing 8 mm. Color of head and thorax darker, more blackish, the color of the humeral processes not distinctly paler than that of the rest of the thorax above. Head less broad, one and one fourth times as wide as long, the apical section of the clypeus comparatively narrow at base and rather deeply emarginate at apex, so that the visible basal width along the dividing sulcation is not more than one third of the distance across the emargination between the lateral apices. Antennary processes black and bearing much black hair. Face without obvious hair along orbital margins and mesonotum likewise not hairy. Wings faintly clouded. First vein joining the costa considerably before the first crossvein. Otherwise agreeing with the preceding description of *O. albipennis*.

Type.—Omaha, Nebraska, May 26, 1907, on a least bittern (*Ixobrychus exilis*) by R. H. Wolcott.

Paratypes.—Type lot, 1 specimen; Lincoln, Nebraska, April 21, 1901, on a bittern (*Botaurus lentiginosus*) by J. C. Crawford.

It is possible that this form is conspecific with *A. ardeæ* Macquart, but after a careful comparison with the description I have decided to let it stand as distinct. Certainly the wings are not as dark as described for *ardeæ*. The specific name is from the subfamily to which the bitterns belong.

3. **Olfersia scutellaris** new species.

Resembling *O. albipennis* Say, but differing from that species, as above described, in the following characters: Somewhat larger, the length about 5 mm., the head and thorax alone measuring 3 mm., the thorax being nearly 2.5 mm. wide at the widest part, and the distance from the front of the head to the tip of the wing measuring 7.5 mm.; head less broad, subcircular, the width only one and one sixth times the length, the face very broad, fully two and one half times as broad as the eye; elevated orbital margins opaque or slightly shiny along extreme outer edges only, their inner edges distinctly hairy; clypeus four fifths as long as front, the apical section shaped as in *O. botaurinorum* but with the base slightly wider, so that it is slightly more than one third (three eighths) of the distance between the lateral apices; antennary processes blackish and bearing much black hair, the palpi slightly shorter than the clypeus; eyes dull plumbeous; each side of scutellum with a long black bristle; wings slightly darker, the first vein joining the costa considerably before the first crossvein; coloration of head and thorax brownish fuscous, the shiny vertex and basal portion of the median longitudinal line stained with reddish, the tips of the tubercles and the scutellum reddish yellow, the latter contrasting strongly with the much darker mesonotum.

Type.—Watkins' Station near Manchester, Michigan, on a least bittern (*Ixobrychus exilis*), May 30, 1894, by R. H. Wolcott (Coll. No. 190).

This species is even closer to *O. botaurinorum,* just described, than to *O. albipennis,* agreeing with the former in size, clypeal structure and venation, but easily separated by the more brownish general coloration, yellowish scutellum, hairy face and mesonotum, broader front, opaque orbital margins and dull-colored eyes.

4. **Olfersia intertropica** Walker.

1849. *Ornithomyia intertropica* Walker, List of Dipterous Insects in the British Museum, IV, p. 1144.

1903. *Olfersia intertropica* Austen, Annals and Magazine of Natural History, Series 7, XII, p. 264.

The type of this species came from the Galapagos Islands, and Austen records additional specimens from Bahia, Brazil, Orizaba, Mexico and Honolulu, Hawaii. The latter author regards *O. acerta* Speiser, described from the Hawaiian Islands, as a synonym of *intertropica* after comparison of paratypes of the former with the cotypes of the latter in the British Museum. A specimen from Orizaba, Mexico, collected in January, 1892, by Prof. Bruner is before me. *O. pallidilabris* Rondani, described from Mexico, is very close to *intertropica,* as pointed out by Speiser, but if, as that author indi-

cates, *pallidilabris* has no fine pale hairs on the orbital margins, the specimen at hand can not belong to that species.

5. **Olfersia angustifrons** Van der Wulp.

1903. *Olfersia angustifrons* Van der Wulp, Biologia Centrali-Americana, Diptera, II, p. 430.

1903. *Olfersia angustifrons* Austen, Annals and Magazine of Natural History, Series 7, XII, p. 265.

This species has been recorded from Oaxaca (Oaxaca) and Teapa (Tobasco), Mexico, and from Rio Sucio, Costa Rica, one specimen from each locality, all in the British Museum. A fourth specimen may now be recorded from Motzoronga, in southern Vera Cruz, Mexico, taken from a species of trogon, February 18, 1892, by L. Bruner. The narrow front (equal to an eye in width) and the rather long palpi and proboscis (the former one and one fourth and the latter three times as long as the clypeus, which is two thirds as long as the front), are good characters of this species which are given in the original description. The Motzoronga specimen, however, has the auxiliary vein complete, though very weak.

6. **Olfersia americana** Leach.

1818. *Feronia americana* Leach, Memoirs of the Wernerian Natural History Society, Edinburgh, II, pl. XXVII, fig. 1–3.

1830. *Olfersia americana* Wiedemann, Aussereuropaische Zweiflügelige Inseckten, II, pp. 606–607.

1835. *Olfersia americana* Macquart, Histoire Naturelle des Diptères, II, p. 641.

1872. *Hippobosca bubonis* Packard, Guide to the Study of Insects, p. 417.

1878. *Olfersia americana* Osten Sacken, Catalogue of the Diptera of North America, p. 213.

1895. *Olfersia americana* Johnson, Proceedings of the Academy of Natural Sciences of Philadelphia, pp. 303–340.

1899. *Olfersia americana* Johnson, Twenty-seventh Annual Report New Jersey Board of Agriculture, p. 699.

1903. *Feronia americana* Austen, Annals and Magazine of Natural History, Series 7, XII, p. 264.

This species, the type of which is yet extant in the British Museum, was originally described by Leach from a specimen from Georgia, and has subsequently been recorded by Packard from Massachusetts on the great horned owl (*Bubo virginianus virginianus*), from Illinois and Texas by Osten Sacken, the latter record being

from Dallas on the red-tailed hawk (*Buteo borealis*), from Florida by Johnson on the screech owl (*Otus asio asio*), and from Haddonfield, New Jersey, November 9, on the red-tailed hawk, also by Johnson. In Nebraska it has been taken at Brownville on the great horned owl (*Bubo virginianus virginianus*) on December 30 by the late Ex-Governor R. W. Furnas, and at West Point on the rough-legged hawk (*Archibuteo lagopus sancti-johannis*) in October, 1884, by L. Bruner, these two specimens being before me. A third specimen at hand is labeled simply "Louisville, Kentucky." Apparently the species is widely distributed in the eastern United States on our commoner birds of prey.

The published descriptions of *O. americana*, while sufficiently explicit that I believe I have correctly identified the species, are yet so brief and general that a redescription of the species would be proper at this time.

Length 6–7 mm., the head and thorax alone measuring 4.5 mm., and the distance from the front of the head to the tip of the wing measuring 10.5–11.5 mm., the thorax being 3 mm. wide at the widest part. Head and thorax brown. Head slightly elliptical, one and one third times as wide as long, the face strongly narrowing anteriad, its width across the middle of the front one and one third times as broad as the eyes at the same level, the elevated, rather narrow orbital margins and the elevated, plano-convex lenticular vertex polished, the depressed, subtrapezoidal median area opaque. A very few short scattered bristles on the inner edges of the polished orbital margins. Clypeus nearly five sixths as long as the front, dullish, the apical section rather broad basally and very broadly and shallowly emarginate anteriorly, this emargination being really arcuate in form, so that the visible basal width along the dividing sulcation is only a little over one third of the distance across the emargination between the lateral apices. Antennary processes black, conspicuously black-haired. Palpi long, fully one and one half times as long as the clypeus, yellowish to brownish in color, finely black-haired. Eyes satiny black. Humeral processes short, bluntly pointed, about concolorous with thorax above or the very tips somewhat paler. Mesonotum with both the longitudinal and the transverse lines rather deeply impressed, especially the latter which are scarcely interrupted medially. Mesonotum not distinctly hairy anywhere. Scutellum with the posterior margin weakly convex, laterally thinly hairy, and with a distinct subapical rim, medio-longitudinally rather broadly and shallowly depressed or impressed, giving the sclerite a slightly sub-bilobed appearance. Pleura above yellowish brown, below shading into a pale yellowish concolorous with the flat, shining sternum, the latter with the anterior angles feeble and concolorous with the rest of the sternum. Head beneath pale yellowish, the labium whitish. Legs light brownish above and

light yellowish beneath, not suffused with dusky except on the tarsi, mostly sparsely black-haired but with a few pale hairs beneath toward the bases of the legs. Abdomen pale brown, becoming more or less blackish terminally, rather strongly and closely black-haired, the apical lateral tufts long, beneath yellowish white, thinly short black-haired. Wings iridescent white, the costal veins and basal part of the longitudinal veins brownish yellow, the costa considerably thickened beyond the end of the first vein which joins the costa much before the first crossvein, the costal border of the marginal cell from one and one fifth to two times as long as the costal border of the first submarginal cell, the first basal cell distinctly more than twice as long as the second basal cell. Auxiliary vein incomplete.

7. **Olfersia wolcotti** new species.

Of the same size and general appearance as *O. americana* Leach, above redescribed, but the front much narrower, not wider than the breadth of an eye, the orbital margins subparallel or but slightly narrowing anteriad; clypeus only about one half as long as the front, the apical section somewhat narrower basally but its apical emargination distinctly deeper and less broad, so that the visible width along the dividing sulcation is nearly one half of the distance between the lateral apices; palpi blackish, twice as long as the clypeus; general coloration of head and thorax darker, dark reddish brown rather than yellowish brown as in *americana*, the legs strongly suffused with blackish; wings faintly dusky, the costal veins and basal part of the longitudinal veins blackish.

Type.—Ann Arbor, Michigan, on a broad-winged hawk (*Buteo platypterus*) shot in the woods west of the town, April 20, 1894, by R. H. Wolcott (Coll. No. 129).

Named in honor of Dr. R. H. Wolcott, in recognition of his valuable work both in entomology and in ornithology. The size of the species precludes its confusion with any other except *O. americana*.

For convenience in separating the above seven species of *Olfersia* the following table is offered:

Size larger, the length to end of wings 10 mm. or more; palpi longer than clypeus.

Front narrowing anteriad, distinctly broader than an eye; coloration yellowish ..... **americana.**

Front subparallel, not broader than an eye; coloration dark brownish. **wolcotti.**

Size smaller, the length to end of wings not over 8 mm.

Front subparallel, not broader than an eye; palpi longer than clypeus. **angustifrons.**

Front distinctly broader than an eye; palpi subequal to or shorter than clypeus.

Clypeus basally one half as broad as the distance across emargination; length to end of wings 7 mm.
Front distinctly less than twice as broad as an eye; scutellum with a copious, long, apical fringe ..... **intertropica.**
Front about twice as broad as an eye; scutellum with a very thin, short, apical fringe ..... **albipennis.**
Clypeus basally about one third as broad as the distance across emargination; length to end of wings 7.5–8 mm.
Mesonotum and scutellum blackish-brown; orbital margins shining, glabrous ..... **botaurinorum.**
Mesonotum dark brown, scutellum yellowish; orbital margins opaque, hairy ..... **scutellaris.**

8. **Ornithomyia buteonis** new species.

Length 7–7.5 mm. Head yellowish-brown, the broadly crescentic orbital margins and the vertex polished, the median area opaque. Clypeus convex, slightly emarginate and rather weakly pitted anteriorly and bearing a small, round pit on the posterior margin. Antennary processes distinctly less than twice as long as broad, clothed with bright pale ferruginous hair, broadly lanceolate owing to both margins being evenly convex, the tips narrowly rounded. Eyes light brown. Thorax above fuscous brown, paling to testaceous on the humeral angles, the inner margins of the dentiform processes and the adjacent spiracle whitish. Mesoscutum with a feeble median impressed line and deep, sinuate, lateral median transverse impressed lines. Scutellum fuscous brown, strongly tinged with reddish on the anterior margin, discally shallowly depressed, and bearing a row of about a half dozen short black hairs near each margin. Under side of head and thorax pale testaceous, the labium whitish at tip. Legs above reddish-brown, below pale testaceous, the tibiæ with the edges fuscous, the tarsi fuscous, the claws black. Abdomen yellowish, copiously but not densely clothed with short, black hairs. Wings clear, the costal veins and bases of the longitudinal veins dark brown, the first longitudinal vein ending in the costa at a point nearly above the first crossvein, the costal border of the marginal cell about one fourth longer than the costal border of the first submarginal cell and the first basal cell more than the length of the second crossvein longer than the second basal cell.

Type.—Neligh, Nebraska, April 26, 1900, on a broad-winged hawk (*Buteo platypterus*) by Merritt Cary.

Paratype.—Guàpiles, Costa Rica, March 1, 1903, by J. C. Crawford.

Belongs to the *O. erythrocephala* group. Agrees with *O. erythrocephala* Leach, of Brazil to Mexico and the West Indies, in size and venation, but differs in the reddish-brown rather than ferruginous head, the concolorous clypeus, the darker legs and the reddish anterior border of the scutellum. *O. nebulosa* Say, from the western United States, is of the same size, but differs in the clypeus being pale

(concolorous with the rest of the head in *buteonis*), and the reddish-brown mesonotum with three yellowish lines (fuscous brown without markings in *buteonis*). From *O. fusciventris* Wiedemann, described from Kentucky, *buteonis* differs in larger size (*fusciventris* is only 5 mm. long) somewhat less deeply emarginate anterior border of clypeus (deeply and angularly emarginate in *fusciventris*), flattish scutellum (basally inflated in *fusciventris*) and in the coloration of the thorax being much darker than the head (concolorous in *fusciventris*). *O. pilosula* Van der Wulp, from Costa Rica, is smaller (5.5 mm.) and has the head and thorax rufous. *O. haitiensis* Rondani, from Haiti, is distinct in its dark-haired antennæ and different venation, the first longitudinal vein ending in the costa before the first crossvein. This latter venational character will also separate *O. avicularia* Linnaeus, the common European species, and *O. varipes* Walker, of Mexico to Colombia and Peru, the latter further differing in the shape of the antennary process. *O. anchineuria* Speiser (= *O. pallida* Say) may be distinguished at once by the interstitial first and second cross veins, making the second basal cell nearly as long as the first basal cell (much shorter in *buteonis*). The coloration is entirely different from *O. butalis* Coquillett, described from Bering Island.

9. **Ornithomyia costaricensis** new species.

Length 7 mm. Front and vertex wholly glossy bright ferruginous, the posteriorly broadening orbital margins and the vertex triangle perfectly smooth and polished, the median area microscopically tesselated, giving it a satiny luster, and of subuniform width. Clypeus concolorous with front and vertex, anteriorly medially emarginate because of a deep rectangular pit, posteriorly also with a large, deep, oval pit. Antennary processes twice as long as broad, their sides convex and their tips narrowly rounded, of a darker ferruginous color than the clypeus and front and provided with long, ferruginous hairs. Eyes glossy black. Humeral prominences pale, heavily black-haired. Mesonotum shining blackish, slightly suffused with reddish along the anterior sutures, bearing a faintly impressed median line and deep, slightly curved, transverso-median depressions on each side of it. Scutellum rounded posteriorly, medially much depressed transversely and this depression bearing several long-black hairs, shining black like the mesonotum but with the anterior margin reddish testaceous, interrupted medially by a blackish stain. Sternum and under side of head greenish testaceous. Legs beneath greenish testaceous, above fusco-testaceous, becoming dusky on the tibiæ, fuscous on the tarsi and with the claws black. Abdominal tegument dark brown, but so heavily clothed with black hairs as to appear blackish. Wings slightly clouded.

the costal veins and bases of the longitudinal veins blackish, the first longitudinal vein ending in the costa slightly before the first crossvein, the costal border of the marginal cell fully twice as long as the costal border of the first submarginal cell, and the first basal cell twice the length of the second crossvein longer than the second basal cell.

Type.—Juan Viñas, Costa Rica, March, 1902, by L. Bruner.

The shiny blackish mesonotum seems to distinguish this species from all of the described North American congeners except *O. butalis* Coquillet, which is much smaller (4 mm.), has the front black spotted on the orbits and vertex with yellow, and is otherwise very different. The species is really close to *O. erythrocephala,* but apparently differs in the deep anterior pit on the clypeus, the red anterior border on the scutellum, and, compared with Van der Wulp's description of *O. robusta* which Austen places as a synonym of *erythrocephala* after a comparison of the types of both in the British Museum, it should also differ in darker legs and abdomen, although these color differences are not clear from a comparison with Leach's original description of *erythrocephala.* From *O. haitiensis* it differs at once in the ferruginous hairs on the antennary process, the dark legs and the different venation (the first longitudinal vein ends considerably before the first crossvein and the costal border of the marginal cell is less than twice as long as the costal border of the first submarginal cell in *haitiensis*). The venational characters are much like those of *O. buteonis,* just described, and separate the species from several of its congeners.

10. **Ornithomyia pirangæ** new species.

Length 4.5 mm. Head and thorax above shining brownish testaceous, clearing to yellowish testaceous on the lower orbital margins, vertex, anterior margin and median line of mesonotum and base of scutellum. Orbital margins, broadening posteriorly, and vertex, polished, the median area conspicuously duller and of subuniform width throughout. Clypeus anteriorly medially emarginate and bearing a small, shallowly rounded pit, most of its dorsal surface involved in a large, oval, deep pit. Antennary processes a little less than twice as long as broad, the outer margins strongly convex and the inner margins nearly straight, causing the pointed tips to appear divergent, in color fusco-testaceous and clothed with dark hairs. Eyes brown. Mesonotum with a slight median longitudinal depression and somewhat stronger transverse, slightly sinuate, median lateral depressions. Scutellum slightly convex and with a slight transverse depressed line near apex which bears four strong black bristles. Under side of head and thorax shining pale testaceous, the

long spines on anterior coxæ and the labium whitish. Legs greenish testaceous, paler beneath, the tarsi infuscated and the claws black. Abdomen yellowish, copiously but not densely clothed with short, black hairs. Wings clear, the costal veins and bases of the longitudinal veins black, the first longitudinal vein ending in the costa above the second crossvein and considerably before the first crossvein, the costal border of the marginal cell a little less than twice as long as the costal border of the first submarginal cell and the first basal cell as much longer than the second basal cell as the length of the second crossvein.

Type.—Juan Viñas, Costa Rica, March 15, 1902, on a summer tanager (*Piranga rubra*) by L. Bruner.

This species is apparently closest to *O. haitiensis* Bigot, with which it agrees in the dark hair on the antennary processes and the first longitudinal vein ending in the costa before the first crossvein, but differs in its smaller size (*haitiensis* is 7 mm. long), in the form of the clypeus (*haitiensis* has a small dorsal pit but a large and deep angular anterior pit) and in the coloration (*haitiensis* has a large, well-defined, cordiform mesonotal area, a black ocellar spot, etc.) It differs at once from *O. erythrocephala* Leach and *O. bellardiana* Rondani in the dark instead of ferruginous hairs on the antennal processes. Its small size separates it at once from the described North American forms except *O. butalis* (which has a very different coloration), *O. anchineuria* (which has the basal cells of subequal length) and *O. fusciventris* (which has the head and mesonotum uniformly colored).

The three species of *Ornithomyia* above described may be separated as follows:

Hair on antennary processes ferruginous.
  Head yellowish brown, the mesonotum fuscous brown ..... **buteonis.**
  Head bright ferruginous, the mesonotum blackish ..... **costaricensis.**
Hair on antennary processes dark..... **pirangæ.**